

Methodology

GYTS is a school-based cross sectional survey which employs a two-stage cluster sample design to produce representative sample of students in the age group of 13-15 years (corresponding to the standards 8-10 in Delhi schools). The Delhi component of GYTS, conducted in 2001, aimed to survey students in standard 8,9 and 10.

Enrollment

The sampling of schools required a complete enrollment list of all the schools in Delhi, which included any of the grades from 8 to 10. The survey sample frame included data about schools (number of students by section/class and range of ages). This was obtained from the Directorate of Education (for government schools) and National Progressive Schools Association (for private schools). A directory of private schools in Delhi was also referred to, for obtaining a comprehensive list of private schools. While the Directorate of Education had a complete list of Government and government-aided schools of Delhi, the private school list had to be prepared by the Delhi-GYTS team by contacting each school individually and obtaining the data on number of students in each of these grades in their school.

The compiled data of schools was sent to CDC for drawing the study sample. All schools with student enrollment numbers greater than 40 and students in grade 8th,9th and 10th were included in the sampling frame. At the first stage, schools were selected with probabilities proportional to the enrollment size. CDC sent back a list of 50 selected schools. Of these 9 were private schools and 41 were government and government-aided schools. Within each school, a computer generated list of random numbers of classes was produced to randomly select the classes in grades 8-10, to participate in the survey. The second sampling stage consisted of systematic equal probability sampling with a random start of classes from each school that participated in the survey. All eligible classes (corresponding to the target age group: 13-15 yrs) in the selected schools were included in the sampling frame. All students in the selected classes were eligible to participate in the survey. However, the survey procedure were designed to protect the student's privacy by allowing for anonymous and voluntary participation. A total of 1731 students participated in the Delhi GYTS survey from 50 schools of Delhi.

Questionnaire

Pretesting and translation

The questionnaire consisted of a core component and an "optional" component. The core questions allow for regional as well as international comparisons of survey results, while the optional questions concentrate on specific issues pertaining to individual countries and cities. The core questionnaire for India was further modified for Delhi to include the local cigarette, bidi and gutkha brands that were popular among the youth. Information

on the prices of these was also collected and included in these questionnaires. The medium of instruction in private schools of Delhi is English and that of Government and government – aided schools is Hindi. Thus the GYTS questionnaire was translated into Hindi. These modified questionnaires were pre tested in 2 focus group discussions (1 in English for private school students, and one in Hindi for government school students).

The work with schools was initiated by seeking written permission from the Directorate of Education for conducting this study in selected government and government aided schools. A two day training of the five field investigators was held in Delhi to train them for selecting the classes at stage two and for conducting the survey in the schools. The selected 50 schools were contacted by the field investigators and coordinators through personal visits. Permission to conduct this survey was sought from school principals after explaining the objectives of these surveys.

Second visits to these schools were made by field investigators, to conduct the survey. The GYTS was administered to the students by the field investigators. This was a self administered questionnaire that took an average of 30 minutes to complete in each class. GYTS questionnaires were provided to students according to the medium of instruction in the school and as per the respondent's choice. In general, the questionnaires in Hindi were provided to government school students and English to the private school students.

A weight was assigned to each questionnaire, to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of nonresponse. The weight used for estimation is given by:

$$W = W1 * W2 * f1 * f2 * f3 * f4$$

Where

W1 = the inverse of the probability of selecting the school

W2 = the inverse of the probability of selecting the classroom within the school

f1 = a school-level nonresponse adjustment factor calculated by school size category (small, medium, large).

f2= a class adjustment factor calculated by school

f3 = a student-level nonresponse adjustment factor calculated by class

f4= a post-stratification adjustment by grade(forms) and gender

SAMPLE DESCRIPTION:

All schools with student enrollment numbers greater than 40 and students in std. 8th, 9th and 10th were included in the sampling frame. A two-stage cluster sample design was used to produce a representative sample of students in Stds. 8th, 9th, and 10th.

School Level - The first-stage sampling frame consisted of all schools containing greater than 40 students in 8th, 9th and 10th. Schools were selected with probability proportional to school enrollment size.

Class Level - The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. All classes in the selected schools were included in the sampling frame. All students in the selected classes were eligible to participate in the survey.

OVERALL RESPONSE RATES:

Schools - 100.00% 50 of the 50 sampled schools participated.

Students- 79.3% 1,731 of the 2,183 sampled students completed usable questionnaires

Overall response rate - $100.00\% * 79.3\% = 79.3\%$

Results

One in 10 students (10%) had ever used tobacco in any form. Proportion of students currently using any tobacco products was 4.5% (Boys: 5.5%; Girls: 3.1%). Of these, the proportion of students who had chewed pan masala, gutkha or zarda in the past 30 days were 1.3%. Among them boys were significantly higher than girls (Boys: 2.3%; Girls:0.3%). (Table 1).

Table 1: Percent of students who use tobacco, India-Delhi GYTS, 2001

Category	Ever Used Tobacco, Even One or Two Puffs	Current Use						
		Any tobacco Product	Any Smoked Product	Smokeless Products	Current Cigarette Smoker	Current Bidi Smoker	Gutkha/ Pan masala	Betel quid with tobacco
Total	10.0 (±2.0)	4.5 (±1.5)	3.2 (±0.9)	2.8 (±1.2)	1.1 (±0.5)	0.7 (±0.5)	1.3 (±0.6)	0.8 (±0.5)
Sex								
Boys	11.1 (±1.9)	5.5 (±1.6)	4.3 (±1.2)	2.7 (±1.2)	1.5 (±0.7)	0.8 (±0.5)	2.3 (±1.0)	1.1 (±0.8)
Girls	8.8 (±3.0)	3.1 (±2.1)	1.9 (±1.3)	2.5 (±1.7)	0.7 (±0.8)	0.6 (±0.9)	0.3 (±0.5)	0.4 (±0.5)

Figures in parenthesis indicate 95% Confidence Intervals